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cc lora461@ecy.wa.gov, mhic461@ecy.wa.gov, Michael Lidgard/R10/USEPA/US@EPA
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Subject Elwha Water Treatment Plant preliminary draft permit

Betsy, Kelly,

Betsy and I discussed the preliminary draft Elwha Water Treatment Plant permit at length on the phone today. I'll try to address some of the concerns she raised in that conversation in this e-mail.

1. There seemed to be some confusion about how the permit addresses the situation in which the background turbidity is less than 50 NTU. In that case, Washington's turbidity standard allows for an increase of 5 NTU, rather than the 10% increase that is allowed when the background turbidity. In order to keep the permit simple (i.e., to attempt to have one set of turbidity limits that "works" for every situation), I required the permittee to substitute 50 NTU for the **influent** turbidity whenever the actual background turbidity was 50 or less. The idea was that 10% of 50 is 5 NTU, so if they substitute 50 NTU for the influent (surrogate for background) turbidity, that will hold them to a 5 NTU increase in that situation.

In the real world, that's an approximation. Take a look at the table below. Let's say the upstream flow was 1000 CFS and the effluent flow was 18 CFS. If the background turbidity was actually 50 NTU, the effluent turbidity that would result in a downstream turbidity, after mixing, of 55 NTU, would be 334 NTU. Fair enough. But, the way the permit was drafted, if the actual background turbidity was actually only 10 NTU and the flows (and therefore the dilution) were held constant, the permittee would substitute 50 NTU in the equation in the permit, and they would be able to discharge the same 334 NTU. However, because the upstream water is cleaner, that discharge would now cause slightly more than a 5 NTU increase in turbidity (5.7 NTU in this case). The less turbid the upstream water, the less accurate the 50 NTU substitution becomes. In the extreme case of 0 NTU upstream, the increase is 5.9 NTU. Like I say, it's an approximation made for the sake of simplicity and if it's too much of a departure from the standard, I can change the permit accordingly.

Influent Turbidity (NTU)	50	10
Effluent Turbidity (NTU)	**334**	**334**
River Flow (CFS)	1000	1000
Effluent Flow (CFS)	18	18
Dilution Factor	56.6	56.6
Downstream Turbidity (NTU)	**55.0**	**15.7**
NTU Increase	**5.0**	**5.7**
% Increase	10.0%	N/A

I realize now that this whole rationale is not explained very well in the fact sheet, and I can address that.

2. Betsy relayed that Kelly pointed out that the downstream flow will not necessarily be the sum of the effluent and upstream flows as the dilution ratio equation in the permit (part I.B.2.a) currently assumes, because there will be some flow diverted from the river by the treatment plant itself, to supply end users and, of course, not returned to the river. This is a fact I had not considered. I'm not sure if it will result in a significant difference to the calculated dilution but if it will, the permit can be changed to factor this in.

3. I had said before that I did not intend for the turbidity standard to be implemented on a monthly average basis, and the fact that an earlier version of the fact sheet stated that was an error on my part. I'm pretty sure I've corrected all references to that now, but will double-check. The turbidity standard is to be implemented on a daily basis, and the average monthly limit is based on expected effluent variability.

4. Receiving water monitoring issues: To clarify, the "point of compliance" for all limits is what is

measured at the point of discharge, not what is measured by the receiving water monitoring. The receiving water monitoring is simply to monitor the impact of the discharge on the receiving water. This is why the receiving water monitoring frequencies are generally lower than the effluent monitoring frequencies. The preliminary draft permit is not specific as to the location where the upstream and downstream samples are to be taken. If Ecology desires specificity on that point (e.g. some particular distance upstream and downstream from the diffuser) that can be included in the draft certification and ultimately the permit.

5. To clarify, the statement under "Basis for Effluent and Surface Water Monitoring" on Page 9 of the fact sheet that "Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality," does not mean that any of the monitoring requirements are optional. It is simply an explanation to the reader of why we are requiring monitoring for pollutants that don't have effluent limits.

These are most of Betsy's concerns, as I remember them, and my responses. Betsy also relayed some concern about implementation of Washington's mixing zone rules. I suggest that we set up a conference call involving my supervisor, Mike Lidgard and I and the appropriate Ecology personnel to discuss this and any other issues with the preliminary draft permit. Perhaps we could target next week for that call. If you have any more questions in the mean time, please feel free to call me.

Thank you,

Brian Nickel

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